

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
02 October 2025 (02.10.2025)



(10) International Publication Number
WO 2025/207123 A1

(51) International Patent Classification:
E21B 34/10 (2006.01) *E21B 41/00* (2006.01)
G01V 3/30 (2006.01)

(21) International Application Number:
PCT/US2024/023535

(22) International Filing Date:
08 April 2024 (08.04.2024)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
18/616,584 26 March 2024 (26.03.2024) US

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(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(54) Title: A SUBSURFACE SAFETY VALVE INCLUDING TWO OR MORE OPPOSITELY POLED ELECTROMAGNETS AND TWO OR MORE OPPOSITELY POLED PERMANENT MAGNETS

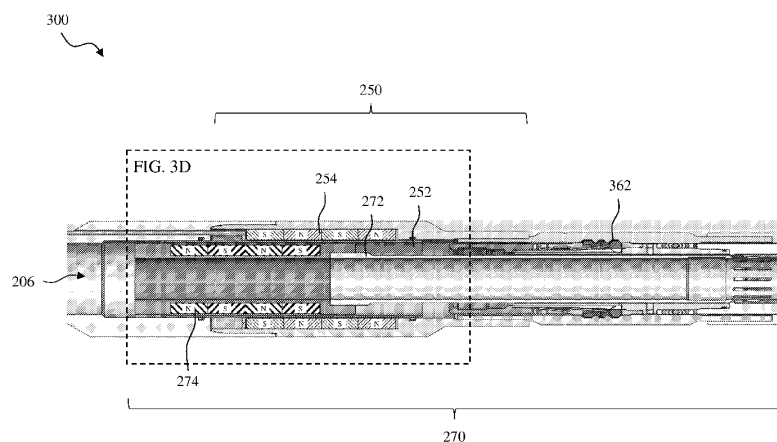


FIG. 3B

(57) Abstract: Provided is an SSSV, a well system, and a method. The SSSV, in one aspect, includes two or more electromagnets fixedly coupled to a housing, a first of the two or more electromagnets having its north pole facing a first electromagnetic direction and a second of the two or more electromagnets having its south pole facing first electromagnetic direction. The SSSV, in accordance with this aspect, further includes two or more permanent magnets coupled to the flow tube, a first of the two or more permanent magnets having its south pole facing a first permanent magnet direction and a second of the two or more permanent magnets having its north pole facing the first permanent magnet direction, the two or more permanent magnets configured to axially move with a flow tube.

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WO 2025/207123 A1

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))